

The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2005

Status Report, February 2005

The *State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2005* is nearly complete and will be published in summer 2005. The report represents a major effort to collect, synthesize, and communicate quantitative results for a wide range of monitoring activities conducted in shallow water coral reef ecosystems by Federal, State, Territory, Commonwealth, non-governmental and academic partners. While it is the second report in the series, it is the first to be based primarily on recent, quantitative monitoring data that have been collected *in situ* in each of 14 jurisdictions, including the U.S. Virgin Islands, Puerto Rico, Florida, Navassa Island, Flower Garden Banks National Marine Sanctuary and other banks in the Gulf of Mexico, Hawaii, Northwestern Hawaiian Islands, U.S. Pacific Remote Island Areas, American Samoa, Commonwealth of the Northern Mariana Islands, Guam, and the Freely Associated States (FAS) of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.

The lead entity coordinating the development of this report is the National Oceanic and Atmospheric Administration's (NOAA) Center for Coastal Monitoring and Assessment's Biogeography Team, part of the National Center for Coastal Ocean Science, with assistance from NOAA Fisheries' Office of Habitat Conservation and NOAA's Coral Reef Conservation Program. Report coordinators within each jurisdiction deserve great praise for their substantial efforts to assemble the jurisdiction chapters, which were authored by local writing teams comprised of coral reef ecosystem experts from state, territorial, Federal, academic, non-governmental and private organizations. Contributors to the report include over 130 people who have provided not only their time, attention and hard work, but in many cases, unpublished data that would otherwise not be available to the community at this time. Without the participation of these dedicated people, this report would not be possible.



Photo: J. Maragos

This report is structured to provide information in a way that corresponds to the primary threats, topics and goals outlined in the *National Coral Reef Action Strategy* (NCRAS; NOAA, 2002) and other guidance documents developed by the U.S. Coral Reef Task Force and member organizations. Following the Preface and Executive Summary, an introductory chapter provides background information about the character, spatial extent, and distribution of coral reef ecosystems in the U.S. and FAS. The third chapter summarizes the current understanding of 13 key natural and anthropogenic threats and stressors to coral reef ecosystems identified in the NCRAS. An additional 'other' threat category was included to allow writing teams to characterize threats and stressors that may be important or unique to a specific jurisdiction.

Chapters 4 through 17 comprise the heart of this report. In these chapters, local writing teams characterize the current understanding of the condition of coral reef ecosystems in their jurisdictions. Writing teams were asked to 1) describe the geographical distribution of reefs and provide salient background information; 2) discuss how each of the key threats has manifested in their area; 3) describe the extant monitoring programs and identify the specific data sets upon which their assessments are based; 4) present methods, results, and discussion for each monitoring data set, organized around the three primary themes of Water Quality, Benthic Habitats, and Associated Biological Communities; 5) introduce the conservation and management actions currently being undertaken to respond to issues of concern; and 6) provide an overall summary of the status of each jurisdiction's coral reef ecosystems and priority recommendations for future research and management alternatives.

Finally, the National Summary chapter synthesizes and integrates results and conclusions from each of the preceding chapters and presents broad scale conclusions from a national perspective. The structure of the National Summary chapter re-frames the results of the jurisdiction chapters in the context of the 13 major goals of the NCRAS. Grouping the information in this section in terms of overall program goals clearly demonstrates how report conclusions can help measure progress towards those goals and provide a means to evaluate the effectiveness of management actions.

This report represents an evolving effort to determine the condition of coral reef ecosystems at both local and national scales. To do this, scientists must ask the right questions, and then design effective studies to gather data with sufficient frequency to confidently answer those questions. As more monitoring data are collected, analyzed, and incorporated, writing teams will be better equipped to present time series information and provide condition reports that address all aspects of these complex and dynamic ecosystems. The ultimate goal of this reporting effort is to increase the participation of scientists and managers at all levels, so that all available information can be utilized to provide the most robust, integrated assessment possible. Data collection and integrated reporting of information are crucial to management efforts that strive to protect and conserve coral reefs, their associated habitats, and the organisms that depend on them. Through this and future reporting efforts, gaps in the current state of knowledge about U.S. coral reef ecosystems will be identified and filled. The availability of up-to-date, accurate, comprehensive scientific information will enable managers to slow or even halt the decline of coral reef ecosystems that has become evident in the last several decades.

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